

A California Trip by Mr. Hastings

Dr. John A. Small, chairman of the Field Committee, in a recent letter from Mr. Hastings, has been offered a series of field trips for any member who may be in California this coming year. Dr. Small hopes that other members will offer similar trips when away from the local flora area.

Mr. Hastings suggests that he will be glad to arrange trips if notified in sufficient time. One suggestion is a trip to the Huntington Library with special attention to the gardens with the finest collection of cacti and succulents in the West, together with many fine palms, cycads and other interesting plants.

Another suggestion is a trip to the famous Rancho La Brea Tar Pits, now a city park, for a study of the pits, their fossils and some of the cultivated plants in the region. Mr. George T. Hastings may be reached at 842 19th Street, Santa Monica, Calif.

BOOK REVIEWS

Flora of the Hawaiian Islands

New Illustrated Flora of the Hawaiian Islands—Book 4. Otto Degener, Degener, Waialua, Oahu, T. H., or Dr. H. N. Moldenke, New York, Botanical Garden, New York City, 1940. 324 pages. \$3.50. (The same price as Books 1, 2 and 3.)

GEORGE T. HASTINGS

Here is a unique work on the flora of a large area, published in parts with no effort to complete the work for families or genera in systematic order, but describing species apparently according to their availability or abundance. In each volume describing 100 species the arrangement is by families, from number 1, the Ophioglossaceae, to number 344, the Compositae. For each species a full page is used, on one side a plate showing the habit of the plant, single flowers and such details of structure as may be of most importance to an understanding of the species, the other side of the page gives the names, scientific, English and Hawaiian, and synonyms, description with greater detail than in most floras, the type locality, local range, and for plants not native to the islands, the extra range. The commercial use and the part played in the culture of the ancient Hawaiians is also given, often in considerable detail. Thus each page is complete for one plant. In each volume there are included some botanical descriptions of families and genera and

keys to the local species. A temporary index concludes the volume. As the pages are not numbered the index refers to the numbers of the families which are printed in the upper corners of the pages. Such pages as the table of contents and index bear letters instead of numbers. The present index lists all the plants described in the four volumes already published and also those described in the author's *Plants of Hawaii National Park*, published in 1930.

The books are bound in cloth, the loose leaves held by screws that are easily removed. Directions with the book advise taking the volumes apart and rearranging the pages by the numbers of the families, then arranging the genera and species alphabetically in the families, and rebinding in convenient units.

The plates, made under Mr. Degener's supervision by artists he has trained, are practically all from living specimens, are attractive and accurate and make positive determination of the species easy. Apparently volumes are to appear as rapidly as the plates can be made. The magnitude of this undertaking can be understood when we consider that there are at least 2,500 species of ferns and flowering plants in the islands for each of which a plate is to be drawn and the description written.

Book 1 was published in 1933, 2 in 1935, 3 in 1938 and this last volume in 1940. Each new volume increases the value of those already published. It is hoped that the succeeding volumes will appear in an accelerated rate that the whole flora of the islands may be available to botanists and visitors to the islands. The parts so far completed describe a large number of the plants most commonly seen and will do much to increase the pleasure of visitors to the islands who are interested in plants and are essential to botanists making a study of the flora.

One disadvantage of this method of writing a flora is, as suggested, that the pages cannot be numbered, another obvious one is that for some time only a few of the species in larger genera can be described. In the *Plants of Hawaii National Park*, for example, it is stated that there are over sixty kinds of *Bidens* in the islands, of which two introduced and four native ones are found in the park and mentioned in this work. In the first three books eight species were described, fifteen more are taken up in book four, evidently some forty more wait description. The great advantage of the method is the appearance of the parts years in advance of the time

when the whole work can be completed. Another advantage is that if changes or corrections are necessary or new species described the new pages can be inserted in their proper places. The temporary indices of the first three volumes are to be discarded now, that of the present volume replacing them. Degener has been in the islands since 1922, has travelled extensively in all the large islands and employs several collectors to help him in the work. Many of his specimens have been deposited in the herbarium of the New York Botanical Garden.

Desert Wild Flowers

Desert Wild Flowers. Edmund C. Jaeger. Stanford University Press. XII + 322 pages. 1940. \$3.50.

GEORGE T. HASTINGS

To many of us the word "desert" originally suggested a barren sandy waste, possibly the Sahara as pictured in our elementary geographies, where nothing could grow, except in the rare oases. Though we have outgrown these early ideas and know that many plants are adapted to live in the desert, it may come as a surprise to find 764 species described from the deserts of California. Quite as much of a surprise, possibly, to know that cacti "are abundant only in places where water supplies are seasonally plentiful" and cannot grow at all in the driest parts of the desert.

Edmund Jaeger is an authority on the biology of the California deserts; his *The California Deserts* published seven years ago was followed by *Denizens of the Desert*—now these are supplemented by *Desert Wild Flowers*. Like the former volumes, this is a popular work for those visitors to and residents of southern California interested in knowing the plants they see. There are no keys nor scientific descriptions, instead there are outline drawings of practically all the plants, mostly made from living material in the field during the twenty-five years that the author has been exploring the Mohave and Colorado Deserts. He suggests that users of the book carry indelible colored pencils to color the illustrations of the plants they find. In addition to the drawings there are photographs of some of the trees and shrubs and of the cacti. Incidentally, these photographs give a fair idea of several types of desert country. Naturally where there are closely related species in a genus, determination by drawings alone may be uncertain. In these cases the